Indiana University – Purdue University Fort Wayne
Opus: Research & Creativity at IPFW

Computer and Electrical Engineering Technology & Information Systems and Technology Senior Design Projects

School of Engineering, Technology and Computer Science Design Projects

4-20-1998

To Implement a Software Voice - Coding Algorithm Using a Digital Signal Processor

Jimmie T. Marks
Indiana University - Purdue University Fort Wayne

Follow this and additional works at: http://opus.ipfw.edu/etcs_seniorproj

 Part of the Computer Sciences Commons, and the Engineering Commons

Opus Citation
Jimmie T. Marks (1998). To Implement a Software Voice - Coding Algorithm Using a Digital Signal Processor.
http://opus.ipfw.edu/etcs_seniorproj/751

This Senior Design Project is brought to you for free and open access by the School of Engineering, Technology and Computer Science Design Projects at Opus: Research & Creativity at IPFW. It has been accepted for inclusion in Computer and Electrical Engineering Technology & Information Systems and Technology Senior Design Projects by an authorized administrator of Opus: Research & Creativity at IPFW. For more information, please contact admin@lib.ipfw.edu.

Final Report on a Senior Design Project
To Implement a Software Voice - Coding Algorithm
Using a Digital Signal Processor

Prepared For: Professor R. Emery, Electrical and Computer Engineering Technology
Indiana University-Purdue University
Fort Wayne, Indiana

Prepared By: Jimmie T. Marks

Date: April 20, 1998

ABSTRACT

This document presents the research, design, and implementation of a senior design project to implement a software CVSD voice-coding algorithm using a digital signal processor (DSP). This design project fulfills the requirements n of the Electrical and Computer Engineering Technology Department of Indiana University - Purdue University Fort Wayne, Indiana. The CVSD algorithm is implemented using an Analog Devices EZ-Lite development kit and a mixture of assembly and high-level-language software. The EZ-Lite Kit hardware consists of an Analog Devices 1847 Codec and 2181 DSP. The developed software provides device initialization, data processing, data loopback at the input of the DSP, and the CVSD encoder and decoder. The software development tool consists of several programs: an assembler, linker, simulator, debugger, and C-language compiler. The costs and schedule for this senior design project are presented in this report.

TABLE OF CONTENTS

TABLE OF FIGURES